

## Hypersensitivity to the pollen of *Olea europea* in Zadar County

Neven Skitarelić<sup>1,2,3</sup>, Jure PupiĆ Bakrač<sup>3</sup>, Nataša Skitarelić<sup>1,3</sup>, Lada Baković<sup>3</sup>,  
Martina Čoza<sup>3</sup>, Željko Čulina<sup>3</sup>

<sup>1</sup> Department of Health Studies, University of Zadar, Zadar, Croatia

<sup>2</sup> Medicine Faculty, University of Rijeka, Rijeka, Croatia

<sup>3</sup> Zadar General Hospital, Zadar, Croatia

The presenting author: Neven Skitarelić ([neven.skitarelic@gmail.com](mailto:neven.skitarelic@gmail.com))

**Introduction:** Olive pollen is one of the most important causes of inhalant allergy in the Mediterranean countries.<sup>1</sup> We investigated the frequency of hypersensitivity to the pollen of *Olea europea* in pollen allergic patients in Dalmatia, Croatia.

**Patients and methods:** A total of 810 patients with pollen allergy were examined: 469 (58%) male and 341 (42%) female, age range from 4 to 53 years. The patients were assessed on the basis of medical history, clinical examination, measurement of pulmonary function (adults and children older than 7 years), intradermal prick test ( $\geq 3$  mm), and immuno-enzyme UniCAP test for specific IgE antibodies. We used standard allergen prick tests produced by the Institute of Immunology in Zagreb, Croatia.

**Results:** Our study confirmed that weeds and grasses, especially *Parietaria officinalis* and *Dactylis glomerata*, are the main pollen allergens. Trees rarely cause allergies in the Croatian part of the Adriatic coast.<sup>2</sup> Hypersensitivity to *Olea europea* occurred in 66 of 810 (8.15%) assessed patients with pollen allergy. *Olea europea* and *Fraxinus ornus* belong to the family of Oleaceae. Both trees are part of the local flora. We confirmed the hypersensitivity to *Olea europea* allergen and excluded cross-reactivity between these plants by specific IgE antibodies measurements. The most prevalent clinical manifestations were rhinitis in 39 (59%) of 66 patients allergic to *Olea europea* pollen and bronchial asthma in 20 (30.3%) patients. It is interesting to note that 51 patients (77%) lived in towns and the rest in villages; only 3 patients (4%) lived on the islands. The prevalence of pollen allergies in patients living in the coastal region is recognized in other Mediterranean countries.<sup>3</sup>

**Conclusion:** Hypersensitivity to *Olea europea* allergen in our patients was significantly lower than in other Mediterranean countries ( $p < 0.01$ ) where it varied from 21% to 31.8%.<sup>4-7</sup> The reason for this difference may be sought in greater industrial pollution and greater areas cultivated with olives in other Mediterranean countries.

**Key words:** hypersensitivity, Olea Europe, Zadar County

### References

1. Tejera ML, Villalba M, Batanero E, Rodriguez R. Identification, isolation and characterization of Ole e 7, a new allergen of olive tree pollen. J Allergy Clin Immunol 1999;104:797-802.
2. Sindik N, Restović-Sirotković M, Skitarelić B, Balić J, Kavurić-Hafner K, Peharda-Sabolić V, Čvorišćec B. Polinoze na području Dalmacije, Istre i Hrvatskog primorja s posebnim osvrtom na pelud Parietariae [Pollinosis in the area of the Dalmatian, Istrian and Croatian coast with special emphasis on Parietariae pollen, in Croatia]. Liječ Vjesn 1989;111:263-5.
3. Ariano R, Passalacqua G, Panzani R, Scordamaglia A, Venturi S, Zoccali P, Canonica GW. Airborne pollens and prevalence of pollinosis in western Liguria: a 10-year study. J Invest Allergol Clin Immunol 1999;9:229-34.
4. Verini M, Rossi N, Verotti A, Pelaccia G, Nicodemo A, Chiarelli F. Sensitization to environmental antigens in asthmatic children from a central Italian area. Sci Total Environ 2001;270:63-9.
5. Geller-Bernstein C, Lahoz C, Cardaba B, Hassoun G, Iancovici- Kidon M, Kenett R et. al. Is it "bad hygiene" to inhale pollen in early life? Allergy 2002;57(Suppl. 71):37-40.
6. Ledesma A, Rodriguez R, Villalba M. Olive-pollen profilin. Molecular and immunologic properties. Allergy 1998;53:520-6.
7. Gioulekas D, Papakosta D, Damialis A, Spieksma F, Giouleka P, Patakas D. Allergenic pollen records (15 years) and sensitization in patients with respiratory allergy in Thessaloniki, Greece. Allergy 2004;59:174-84.